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ABSTRACT

Developments in American higher education from 1905-1945 to increase efficiency and coordination are discussed. Data were collected on the costs of instruction, utilization of facilities, and the distribution of faculty time in order to find ways to reduce wastage and increase efficiency. A certain amount of this wastage resulted from competition between rival institutions within the state systems of higher education. Leaders in the federal and state governments supported data gathering activities of the efficiency experts. Developments toward centralization increased early in 1930 but subsided after 1945, during which a more voluntary approach to coordination prevailed. Taylor's approach to scientific management, which caught attention in the business world, was applied to education in the early 1900's. Many educators of this period were interested in making their work more scientific. The efforts of Elwood P. Cubberley, E. C. Elliott, Henry Suzzallo, E. B. Stevens, Samuel P. Capen, and others to make educational administration more efficient or scientific are documented. The move toward the more centralized coordination of higher education also contributed to the efficiency movement in higher education. The duplication of courses, facilities, and staff which led to the rivalries among schools, which in turn led state officials to form coordinating boards, could best be studied by using the cost accounting procedures of the efficiency experts. The role played by federal officials and the developments in some specific states are covered. (SW)

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# "Efficiency and the Rise of State Coordinating Boards for Higher Education 1905-1945"

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American higher education during the period 1905-1945 underwent pressures for a number of changes. As usually happens, these pressures for change came both from inside and outside academe. They came from government officials and the business community in the form of calls for greater efficiency. They came from government officials in the form of calls for better coordination between the various public institutions within state borders. And they came from educational leaders anxious to make educational practice more "scientific."

To a considerable degree the calls for efficiency and for state coordination of public higher education can be traced to a single problem area - the rivalry between competing public colleges and universities within state borders. The wastefulness resulting from this rivalry did not rest well with state leaders, who appealed to officials in the U.S. Bureau of Education to help them find a more efficient approach. These officials and the educational leaders who shared their thinking had, in the meantime, come under the influence of scientific management, a movement with beginnings in Andrew Carnegie's steel mills which had worked its way into the business world in general and by 1905 was under consideration among educators. As applied to education, scientific management meant developing measures of productivity in the "educational factory." What does it cost, these scientific managers asked, to provide a student with one clock hour of instruction in a given subject matter field? How does this cost compare between Institution A and Institution B? If it costs more at Institution B, how might Institution B become more efficient? Or, perhaps better yet,

might not Institution B stop teaching the subject matter in question and leave the task to the more efficient Institution A? Arriving at distinctions between the missions of Institutions A and B required the efforts of state coordinating boards. These boards, as the depression of the 1930's made its impact on the spending for higher education, became all the more important in deciding on directions in which higher education should move. Only with the crush of new students following World War II did the pressures for efficiency and coordination decline.

## The Problems of Interinstitutional Rivalry

High on anyone's list of barriers to institutional efficiency during this period would have been the rivalry which afflicted the nation's colleges and universities at that time. The seeds of this rivalry had been planted during the previous century in the eagerness of educational leaders to generate new institutions far beyond the capacity of the nation to support them. By the turn of the twentieth century many of these new institutions had closed their doors for lack of students and resources, but for those which remained problems continued. Each institution had aspirations for growth, and too often that growth produced serious duplications of effort. Political leaders viewed such duplication in public colleges and universities as wasteful. They therefore began seeking ways to reduce the duplication.

Of special concern to these leaders was the growing rivalry in those states which harbored separate state universities and land grant colleges. When signed by Abraham Lincoln in 1862 the

Land Grant College Act permitted states at least two choices. They could give the resources to one or more already existing public or private institutions, or they could use the grant to establish a new college or university. Given these options, roughly half the states chose to have both a state university and a land grant college.

The decision to establish separate institutions came under fire early in this century. Edwin E. Slosson wrote in 1910, for instance, that, "The States that have separated the agricultural college from the university in order to appease local ambitions have suffered from it, because there is a great loss of money and still more of efficiency through the duplication of buildings, laboratories and professorships." (1) For officials of the U.S. Bureau of Education relations between the land grant colleges and the state universities had become ". . . possibly the greatest problem in educational administration in the United States." (2) Especially troublesome, according to the specialist in higher education for the Bureau, Samuel P. Capen, was the duplication in these rival institutions of courses in engineering, which he labeled the ". . . most dangerous of all disputed areas in State-supported higher education." (3)

Alabama, Iowa, and Washington offer examples of these difficulties. In Alabama the State University had moved beyond its original arts and sciences curriculum to include offerings in engineering. By the same token the Polytechnic Institute had

added to its traditional engineering courses a four-year arts and sciences curriculum. (4) In Iowa the State University and the State College of Agriculture and Mechanic Arts were fighting each other over the duplication of arts and sciences courses as well as graduate level instruction. (5) Meanwhile, in Washington the rivalry between the University in Seattle and the State College in Pullman had become so serious as to warrant the establishing of a special study commission of the state legislature. When the Pullman institution in 1916 hired as its president the man who earlier had served as best man at the wedding of the president in Seattle, state officials hoped for an end to hostilities. The two presidents in question shared these dreams; but within a year they found their friendship hopelessly shattered, a casualty of interinstitutional rivalry. (6)

## The Call for Efficiency

Accompanying these distressful examples of interinstitutional rivalry was a general move across the nation to achieve greater efficiency in the operation of educational institutions. Callahan has documented this move among the nation's common schools, but he gave less attention to the efforts among colleges and universities to produce greater efficiency. (7) As the examples of duplication illustrate, the institutions appeared vulnerable to charges of inefficiency. Their leaders and the leaders in state and Federal governments set forth, therefore, to make some changes.

As Callahan indicated, this move toward efficiency had its beginning in the common schools. Inspiration for the idea came

from Frederic Taylor's concept of scientific management. While Taylor's approach derived from the industrial setting, this did not deter the educational managers and critics. The public had a right to know, they explained, how the schools spent its money. That public, furthermore, understood the language of industry and business. The businessman, wrote Callahan, had assumed a leadership position in American society; and his thinking and his values held sway in the public arena. Schools should try, therefore, to couch their communication in that language. (8) Among those who tried to comply was Elwood P. Cubberley, the eminent Stanford educationist. In his highly influential textbook entitled Public School Administration Professor Cubberley wrote as follows:

> Our schools are, in a sense, factories in which the raw products (children) are to be shaped and fashioned into products to meet the various demands of life. The specifications for manufacturing come from the demands of twentieth century civilization, and it is the business of the school to build pupils according to the specifications laid down. This demands good tools, specialized machines, continuous measurement of production to see if it is according to specifications, the elimination of waste in manufacture, and a large variety in the output. (9)

Applying Cubberley's ideas to higher education required educational leaders, as a first measure, to identify the characteristics of an "efficient college." Ernest D. Burton and Calvin H. French made such an attempt in one of the earliest publications of the Association of American Colleges. An efficient college, they proposed, is one which has "a teaching force, equipment and

endowment which will enable it to do well all that a college ought to do." (10) It should have 400 students, 40 faculty members, assets of $3 million, and an income of $125,000 a year. (11) Writing during the depths of the Great Depression some sixteen years later, Carnegie Foundation President Henry Suzzallo (a student and colleague of Cubberley) identified three criteria by which he would measure the efficiency of a state system of higher education. Institutions within that system, Suzzallo insisted, should provide only that education which other institutions could not provide. Each college or university, he continued, should provide only the kind of education best suited to each kind of student. And state and private assistance should go only to those institutions, he insisted, which could provide high quality education. (12)

Applying scientific management to higher education required comparative cost accounting, and educational leaders made serious efforts to develop workable procedures, despite their lack of access to the electronic data processing equipment of today. (13) One of the first institutions to develop cost studies was the University of California, where an early report appeared in 1911. (14) The U.S. Bureau of Education began developing cost accounting procedures between 1914 and 1917 that aimed at comparing costs between states. In 1917 the Board of Higher Curricula in the state of Washington began preparing annual cost reports on the five public institutions of higher education there. (15) In 1919 the U.S. Bureau of Education published a cost study of fifty-eight normal schools for the year 1917-18. (16) A year later Stanford's Professor Jesse B. Sears undertook a cost study of

the University of Minnesota. (17) 1920 also marked calls from the Carnegie Foundation for the development of forms for financial reports and from the Association of Business Officers for Universities and Colleges of the Middle West for tables whereby cost information could be compared. (18) In 1922 Arthur B. Moehlman published a report of student-hour costs in the four Michigan normal schools between 1910 and 1921; and in 1923 Fred J. Kelly, the Dean of University Administration at the University of Kansas, proposed developing a method for comparing costs among institutions along the lines of a system he had developed at Kansas. (19) Cost data, Kelly argued, could be developed for each department and be used at the time the budget was put together. Costs in the Kelly approach were shown in terms of maintenance, overhead, cost per student credit hour, size of classes, teaching load, and a number of other factors. (20)

In 1925 E.B. Stevens, Suzzallo's "efficiency expert" during Suzzallo's presidency at the University of Washington, and E.C. Elliott, president of Purdue University, published a report of the Educational Finance Inquiry Commission entitled Unit Costs of Higher Education. According to Stevens and Elliott, "(O)ur cherished American educational system must be based upon a thoroughly understood and carefully calculated foundation of social economy." (21) Such a foundation, for higher education, required "a simple common method for the calculation of annual per-student cost of instruction in higher institutions."(22) Unit cost figures, Stevens and Elliott argued, would serve two functions; "economics of operation" and supporting evidence in

requests in funding. (23) The authors urged college and university officials to be quite open in making their cost figures known to the outside world. "The friends of higher education," they argued, "should know the facts of costs and help to reconcile them with society's other needs and society's ability to pay." (24) Stevens and Elliott concluded with a list of eleven recommendations, one of which stated "(t)hat there is a need of standardizing the financial accounting of institutions of higher education in order to make possible satisfactory cost comparisons and judgments based on such comparisons looking to wise public policy with reference to the support of higher education." (25) As Stevens had commented in an earlier publication, university leaders needed to take the lead in developing the new accounting system. Otherwise the task would pass to an "unsympathetic, misinformed, and possibly prejudiced public." (26)

In some instances the people advocating cost accounting systems for higher education undertook an analysis of faculty activities. Stevens and Elliott, for example, discussed the distinctions between faculty time allotted for teaching and that allotted for research. University professors, they admitted, felt the need to put aside time for research, "regardless of the facilities of the department, the training of the men, or the needs of the world." (27) Some such work nevertheless contributed to a professor's teaching and served to keep him "alive." Stevens and Elliott could therefore countenance putting aside some time, but they warned that costs would rise if administrators permitted an across-the-board decrease in the teaching load in

order to increase the faculty's time for research. Time allowed for research, according to their experience, did not produce more research. "The apparent lack of correlation between a light schedule of teaching hours and productive scholarship," they argued, "points rather definitely to such a conclusion." (28)

Six years before Stevens and Elliott published their report one of Stevens's colleagues at the University of Washington, Leonard V. Koos, prepared a bulletin for the U.S. Bureau of Education in which he analyzed faculty activities at the Seattle institution. Koos asked faculty members to keep a record of how they spent their time during the period between Monday, May 14 and Saturday, May 19, 1917. University of Washington professors, he found, spent an average of 5.8 hours a day teaching and 2.7 hours a day in non-instructional activities. Their research averaged 3.7 hours a week, with almost half of them engaging in no research whatsoever. Koos's findings led him to the same position taken by Stevens and Elliott as it related to permitting all members of the faculty time for research. Such a move he labeled uneconomical. Give time for research, he insisted, only to those members of the faculty who had shown the interest and inclination toward it. (29)

Koos typified his report as reflecting an effort to make educational administration more scientific. In so doing he reflected the thinking of an increasingly influential member of the staff of the U.S. Bureau of Education, Samuel P. Capen. Holding degrees from Tufts, Harvard, and the University of

Pennsylvania, Capen had begun his professional career as a member of the faculty of modern languages at Clark University. His interests during the last three years at Clark changed, however, in the direction of education; and, after lecturing for awhile in school administration at Clark, he accepted the position in 1914 as specialist in higher education of the U.S. Bureau of Education. This position gave Capen a platform from which to advocate a more scientific approach to college and university administration, and he used it to good advantage. Capen was openly critical of what he found happening in the institutions of his time, as revealed in the following quotation from his 1916 report for the Bureau:

> The field of higher education has until very recently seldom been invaded by the educational investigator. Efficiency tests and statistical measurements have been applied with increasing frequency to the work of the lower schools, and a voluminous literature in which the results are recorded has already grown up. The literature of higher education, however, is still preponderatingly of the naively philosophical order. The majority of those who write about the college and university are apparently committed to the method in vogue before the 'Novum Organum' burst through the thickets of scholasticism. (30)

Capen found reason both for concern and for hope in what he saw happening in higher education in 1916. On the one hand he recognized the difficulty of comparing one institution's data with that of another. Yet this "terra incognita of cost accounting," as he called it, constituted one of "the most needed investigations in the whole field of higher educational administration." (31) Capen was heartened, therefore, to find across the land university presidents "inspired by the example of the business

world and spurred by the penetrating inquiries of trustees and legislators" to collect statistics on their operations and to use those statistics in the management of their institutions. (32) Like Stevens and Elliott, Capen urged educational leaders to make their findings known to the general public. "(N)othing a college can do," he advised, "serves better to strengthen the public confidence in the integrity and efficiency of its management." (33)

Not everyone in higher education, it goes without saying, agreed with Capen on the advantages of the efficiency movement in academic government. Callahan wrote about the vigorous dissent offered by professors to "the invasion of higher education by efficiency experts." (34) Herman C. Bumpus, the president of Tufts University, spoke strongly in his attack on the efficiency movement. President Bumpus took as his special target the people who had attempted to impose efficiency standards at the University of Wisconsin. At fault here were the accountants hired to make the University more efficient. The accountants Bumpus accused of being "ignorant of college purposes, out of sympathy with long-established methods that they did not care to understand, and arbitrarily insistent upon the introduction of fantastic methods repugnant to the purposes of an educational institution."(35) Accountant strategies, according to Bumpus, set the students against the faculty, the faculty against itself and the Board, and the University against the State, leading to a concern for possible losses of funds in the University's budget. The Wisconsin experience caused Bumpus to conclude that only people who understand higher education be permitted to conduct the efficiency tests which at that time had become popular in educational circles.

The Bumpus criticisms notwithstanding, government and educational leaders persisted in their efforts to make institutional management more scientific and more efficient. Samuel F. Capen found himself in an especially strategic position to lead in this movement. He at least understood higher education well and thus could respond to some of the Bumpus criticisms. The special role Capen assumed resulted from the advice sought by state governments as they struggled to reconcile differences resulting from institutional rivalries within their borders. These rivalries led to the wastage and inefficiency of duplicated courses and facilities. In looking about for expert - yet unbiased - advice, the state leaders turned to the U.S. Bureau of Education. More times than not, the Bureau's specialist in higher education served on the team that provided that advice.

## The State Surveys

Samuel F. Capen filed two reports in 1916. One dealt with the problems of duplication and rivalry in Iowa, the other with similar problems in the state of Washington. These reports provide insight into Capen's efforts to bring greater efficiency to higher education.

In the case of Iowa, Capen and his committee were asked to recommend ways of reducing duplication in the three State institutions: Iowa College of Agriculture and Machanic Arts in Ames, Iowa State Teachers College in Cedar Falls, and the Iowa State University in Iowa City. In developing their recommendations the Capen group gathered masses of data aimed at comparing enrollment

trends, per capita costs, space utilization, building costs, faculty work load and salaries, and class size at the three State institutions. Armed with the data, the Capen group arrived at a series of recommendations for Iowa officials. Each of the three institutions was assigned "major lines" and "service lines," which meant in each case that programs already begun at one institution would be transferred to another. Such a distribution of effort would help to reduce duplication and to increase efficiency. While such shifts would indeed prove difficult, the data collected and reported by Capen and his commission were meant to show the wisdom of making the changes. (36)

These techniques Capen also used in his Washington report. (37) Here the major conflict concerned the University in Seattle and the State College in Pullman, but State officials also wanted the Bureau staff to report on the work of the normal schools and the common schools. With the assistance of Harold W. Foght, Bureau specialist in school practice, and Alexander Inglis, assistant professor of education at Harvard, Capen set forth to gather the data on which he would base his recommendations. The format for the tables, maps, and graphs in the Washington report looks much like that from Iowa, although the Washington material seems to offer more comparative data with other states.

The recommendations resulting from Capen's analysis of the Washington data proved painful to the State College and supportive of the University. Judging from the data, the University of Washington had not received its fair share of State support in recent years. Its buildings Capen called ". . . unworthy of a

great university in a great and wealthy state." Moreover its expenditures per student during the two years prior to the report were much lower than at any other major institution which the Bureau had recently studied. Certainly, the data showed the University to require infusions of State money. For the State College, on the other hand, the picture appeared different. Its physical plant was quite adequate; and, while faculty salaries were low, the expenditures per student appeared among the highest of any institution studied in the various Bureau surveys. The University fared well, too, in the matter of duplication of programs, retaining the engineering departments which might have gone to Pullman while the State College had its major lines in the arts and sciences carefully prescribed. As University President Suzzallo wrote to Nicholas Murray Butler, "The report is exceedingly favorable to us and very conducive to a settling of the entire problem of duplication." Given another six years, Suzzallo continued, he expected to gain major lines in pharmacy and in civil, electrical, mechanical, and mining engineering. (38)

The Capen group also addressed the need for officials of the various Washington state institutions to start meeting at regular intervals in order to coordinate their work better. From this recommendation there emerged the Joint Board for Higher Curricula. This board had authority over the duplication of courses and also gathered data on the basis of which the institutions of higher education would receive their funding from the state. Thus an early form of state coordination came to Washington.

## State Coordinating Boards

Washington, of course, was not the first state to establish a coordinating board for higher education, nor did its board have the authority given to such agencies in other states. In New York, for instance, the University of the State of New York has had a coordinating role over all of the educational enterprise since 1784. Other states - including Michigan, Wisconsin, Montana, and Nevada - established similar agencies during the nineteenth century.

With the advent of the "Age of Efficiency" in the early twentieth century, however, the move toward state coordination accelerated abruptly. In this move, too, there came a higher level of centralization than the states had heretofore contemplated. By these measures state leaders hoped to reduce the wastage of duplication and to avoid some of the penalties of institutional rivalry which had come increasingly to bother them. As Capen wrote in the report on Washington, "The value of some central coordinating machinery is that it can study State educational problems in a nonpartisan spirit for the purpose of determining what is and what is not needed and that it can bring state institutions to comply with its conclusions. (39)

Florida started the coordination effort in 1905 by abolishing the separate boards responsible for each of her state institutions and putting them all under a single board. Iowa followed suit in 1909, and so did West Virginia. In that same year Oregon established a State Board of Higher Curricula, which did not replace the separate boards but nevertheless had jurisdiction over the curricula at the University and the Agricultural College.

A year later Mississippi abolished the separate boards of her four institutions of higher education and put them under a single board. Oklahoma followed in 1911, and Idaho in 1913. In both of these states the central board had control of all education between the elementary school and the university. Kansas also established a State Board of Administration in 1913 having control over the university, the land grant college, the three normal schools, the school of mines, the school for the deaf, the school for the blind, and the penal institutions. North Dakota in 1919 also put penal, charitable, and educational institutions under a single board. (40)

1913 also marked a strong move toward centralization in Montana. Despite a nineteenth century constitutional provision for a State Board of Education which controlled all of higher education, each institution had retained separate executive boards. The local boards, by 1913, had usurped the State Board's authority. So the Montana legislature in 1913 put the State University at Missoula, the College of Agricultural and Mechanical Arts at Bozeman, the School of Mines at Butte, and the Normal School at Dillon all under the University of Montana. (41) At the head of the new agency the legislators placed a chancellor who had authority over all appointments and veto power over faculty actions in all institutions, as well as responsibility for preparing the state's higher education budget. These moves for greater centralization brought cries of anguish from institutional leaders, who succeeded in convincing the legislature at its 1915 session to repeal the new law. They could not cope, however, with the governor's veto of the repeal, so the agency continued to function. In 1915 it named its first chancellor,

Edward C. Elliott, who later wrote the report with E.B. Stevens on unit costs in higher education.

Stevens's exposure to state coordination in Washington took a different form. The Washington legislature in 1897 had created a State Board of Higher Education, consisting of the presidents of the University of Washington, the State College, and the three normal schools and members of the State Board of Education. This new creation had wide powers, including approval of the courses of study at the normal schools, setting of entrance requirements at the University and the State College, and the development of courses and regulations that would "place the state institutions in harmonious relations with the common schools and with each other and unify the work of the public school system."(42) The new board limited its actions, however, to accrediting high schools and setting courses for the normal schools. In 1909 the Board of Education superseded the Board of Higher Education, but it never assumed any coordinating role regarding higher education. Interinstitutional rivalry thus continued unabated, setting the stage for the state survey in 1916 in which Samuel P. Capen participated. The Capen group recommended that some form of coordination be developed, and from that recommendation emerged in 1917 the Joint Board for Higher Curricula. The Board during its first four years consisted simply of presidents and regents of the state's higher institutions, thus leaving authority in their hands. The cost accounting procedures introduced by the Capen group became the

responsibility of the Board, and these procedures were used for the generating of millage proposals to the state legislature and for the consideration of new courses of study. In 1921 the regent members of the Board were replaced by four laymen not connected with any institution. None of these moves solved the problem of institutional rivalry, however, leading the governor four years later to recommend abolishing the Board and establishing in its place a stronger board, one that would coordinate all of education from elementary school through the university. The Legislature did agree to abolish the old board, but the governor could not muster sufficient legislative support for the new one. (43) Washington thus closed out the decade of the twenties with no coordinating board whatsoever.

Although Washington aborted its attempts at state coordination, the practice grew elsewhere. Robert J. Leonard, writing in 1923, considered the time most appropriate for the establishing of coordinating boards, as witness the following statement:

> With the steadily increasing tax rate, the general popularity of higher education and the need for adding periodically new and expensive curricula, the public is vitally concerned in seeing that the state institutions are operated at a maximum of efficiency, with no serious duplications of function and no unnecessary and harmful rivalries. (44)

Leonard went on to identify four types of coordination in effect in 1923:

1) A single board with or without a chief administrative officer; examples, Iowa, Kansas, Idaho

2) A single institution under a single board and a single administrator; example, Montana

3) An unofficial, voluntary conference of institutional representatives; example, Missouri

4) Curricular boards to supplement but not replace already existing governing boards: examples, Oregon, Washington, Alabama, Utah (45)

Leonard focused his attention on the fourth of these types of coordination and came to the conclusion that such boards had achieved little, mainly because they lacked sufficient authority.

Leonard's findings may account for the move toward a stronger coordinating board in Oregon. Not unlike its neighbor to the north, Oregon had had a curricular board of Leonard's fourth type since early in the century, but rivalry and wastage had continued to frustrate the board's efforts to achieve greater efficiency. Then in 1929 the Oregon legislature abolished the governing boards of the University of Oregon, Oregon State University, and the three normal schools. In addition it discontinued the old State Board of Higher Curricula, which had come under increasing public criticism. In the place of the old State Board, the legislature named a new agency, the State Department of Higher Education, consisting of nine lay members. All of the authority of the old boards now came to the Department, which was ordered "to reorganize the work of each and all institutions under its control so as to eliminate unnecessary duplication of equipment, courses, departments, schools, summer schools, extension activities, offices, laboratories, and publications." (46) The new department thereupon asked the U.S. Office of Education to conduct a survey, on the basis of which further changes might be recommended. The Federal commission was satisfied that Oregon's new board could eliminate the competition

between the state university and the land grant college. "The new Board," wrote the commissioners, "is not an arbiter of institutional contests; it is a creator of a State-wide educational policy with control over all activities that are necessary to put these policies into effect." In the view of the commission, "whatever the past may have justified in the way of institutional ambition, the future must contemplate one great system of higher education, with its units not competing but cooperating to make the single enterprise most effective." (47)

The recommendations of the Federal representatives spelled out the specifics of the system they had in mind. The University of Oregon and the Oregon State College would both offer identical lower division curricula. At the upper division, however, strong institutional distinctions would prevail. Upper division science students at the University of Oregon would transfer to Oregon State College, and upper division humanities and social studies students at the College would transfer to the University. Such a move, in the words of the Federal report, would produce a "great school of art, literature, and social science" at the University and a "great school of science at the College." By the same token, professional schools based on the arts, literature, and social science would be housed at the University while professional schools based on the sciences would move to the College. (48)

The Oregon move which perhaps most caught national attention, however, put a chancellor at the head of the Board of Higher

Education. A year after Oregon established the chancellor's position, Kelly and McNeely in a report prepared by the Carnegie Foundation in cooperation with the U.S. Office of Education embraced the Oregon action as the trend of the future. "(A) single (lay) board without a single educational executive," they wrote, "will often fail to bring about effective coordination of the work of the several institutions in a State." (49) The executive officer, according to Kelly and McNelly, would reduce the helplessness which otherwise afflicted lay boards when they tried to reconcile the reports and recommendations of presidents of competing institutions. Writing a year later, David S. Hill also endorsed stronger centralization, arguing that it would enable the state better to respond to the general public. (50) The idea also caught favor in the South, both Georgia and Mississippi naming chancellors for their systems during these same years. (51) Georgia took probably the strongest steps toward centralization during these years, putting the various branches of the University under a single board, naming a chancellor, reducing the number of institutions of higher learning from 25 to 14, and changing two senior institutions into junior colleges. (53)

The moves of the 1930s toward greater and greater centralization and coordination reflected the economic pressures which accompanied the Great Depression. Educational leaders, according to Hill and Kelly, were seeking means of economy and efficiency in a time of economic stress. Diligent care was needed in the expenditure of money and effort and might require "retrenchment

and even enforced frugality." (53)

By 1934 most states had some form of coordinating board. 11 states -- Florida, Georgia, Idaho, Iowa, Kansas, Mississippi, Montana, New York, North Dakota, Oregon, and South Dakota -- had centralized agencies which Berdahl would later label "consolidated governing boards." An additional 24 states had different coordinating boards for different groups of institutions -- normal schools and public education operating under one board, for example, and institutions of higher education operating under separate boards. This left only 13 states having separate boards for each college and university. (54) During the years that followed a few more states and territories established coordinating boards or agencies: Kentucky in 1934, Alaska in 1935, Rhode Island in 1939, Oklahoma in 1941, New Jersey in 1945, and Arizona in 1945. The Arizona action, on the other hand, marked the last effort by a state government to establish a consolidated governing board until 1963. (55) Pliner and Berdahl characterize the period between 1945 and 1963 as a time when more voluntary approaches to the coordination of higher education prevailed.

## Discussion

This paper has explored moves undertaken in American higher education during the period 1905-1945 to increase efficiency and coordination. It shows the efforts undertaken by administrators and an occasional researcher to obtain data in a systematic way relating to the costs of instruction, utilization of facilities, the distribution of faculty time, and other such factors. Armed with these data, people hoped that they might find ways to reduce

wastage and increase efficiency in American higher education. A certain amount of this wastage resulted from competition between rival institutions within the state systems of higher education, and leaders in the Federal and state government set forth to curb that wastage. In so doing these political leaders gave support to the data gathering activities of the "efficiency experts." The paper has shown how moves toward centralization increased early in 1930 only to subside after 1945, during which a more voluntary approach to coordination prevailed.

It remains to ask why these particular changes occurred. What caused some leaders in higher education to endorse the move toward efficiency which characterized this period? Why did state coordination grow? Did the two movements complement each other? Why did coordination become more centralized in some states and not so in others? And, finally, why didn't the trend toward stronger centralization which observers saw occurring in 1933 and 1934 continue after World War II? These and other questions require some answers.

The move toward greater efficiency has several explanations. In the first place, Taylor's approach to "scientific management" had caught the attention of the business world and that attention transferred to education. If, as Veblen's The Higher Learning in America implied, business principles had come to dominate the thinking of presidents and trustees during those years, then scientific management would have been a part of that thinking. Applied to education scientific management meant gathering data based on the systematic observation of the educational enterprise and then applying those data to making subsequent managerial decisions. Higher education, while it moved more slowly than the

common schools, nevertheless showed its willingness to follow such thinking.

Another possible explanation for the move for efficiency derives from the interest of educators of this period in making their work more "scientific." The spirit of such thinking appears in the Capen quotation cited above in which he compared writing on higher education in 1916 to that period "before the 'Novum Organum' burst through the thickets of scholasticism." Capen considered himself one of that group of educators of his time who would put the study and practice of education on a more solid footing. Capen's influence, in itself, does not account to all of the change. For instance, Columbia University's Teachers College had emerged by 1905 as the nation's premier center for the study of education, and from its seminar rooms emerged a number of the leaders -- Cubberley, Suzzallo, and Elliott among them -- of the efficiency movement. To be efficient meant, in other words, to be more scientific, at least in the eyes of this group. While Capen was not a product of Teachers College, he nevertheless reflected the thinking of some of the Columbia group.

The move toward the more centralized coordination of higher education also contributed to the efficiency movement in higher education. If leaders in a centralized system hoped to defend the decisions they made in behalf of one institution at the expense of another, they needed data. If two rival institutions both insisted on continuing expensive engineering programs, choosing between one or the other might be substantiated if officials knew which program operated most efficiently. The cost accounting procedures associated with the efficiency movement

helped state officials better to make such decisions. Cost accounting thus entered higher education as the tool needed by the coordinating boards in order for them to function as expected.

State universities and the land grant colleges brought the more centralized forms of coordination on themselves. Their willingness to duplicate courses within state boundaries and their incessant wrangling over funds whenever state legislatures convened caused state political leaders to seek some vehicle which would help them to identify appropriate state responses to institutional needs. This other vehicle proved to be the state governing board. When that agency proved too weak to accomplish its ends, state officials did not hesitate to strengthen it.

An intriguing element in such moves was the role played by Federal officials. Such people came from outside the states in question and therefore were less subject, so the thinking went, to bias. State after state thus turned to Capen and those who followed him in their efforts to decide how best to coordinate higher education within their borders. Fears over Federal control of higher education did not appear to bother the state officials in this context.

The move to efficiency and the move to state coordination of higher education thus occurred hand-in-hand. The one served the other. The duplication of courses, facilities, and staff led to the rivalries which in turn led state officials to form coordinating boards that could best be studied by using the cost accounting procedures of the efficiency experts. On the basis

of those studies decisions could be made that would reduce the duplication and waste.

Why did centralized state coordination grow in some states and not in others? Several explanations come to mind. As mentioned earlier, the problems were most intense in states having both a state university and a land grant college. States which gave land grant money to already existing state universities or which in any other way avoided establishing competing institutions had less need for a coordinating board. Illinois had no such board, nor did Ohio, Minnesota, and a number of other states. Berdahl has further explained that the states which moved to the most centralized forms of coordination had slower growth rates and more limited fiscal resources. (56) Such an explanation seems valid and helps one to understand the situation in such wealthy states as Michigan and Illinois. Wisconsin flirted with the idea of developing a state system but backed away from the idea. California developed a coordinating agency in 1933, but that agency remained relatively weak. States, too, with strong private college and university sectors found little need to develop coordinating boards. Institutional rivalries between the public institutions in those states were not so serious as to require establishment of coordinating boards or agencies.

Finally, one must account for the decline after 1945 in the interest in efficiency and coordination. Hegel would have argued that during 1905 through 1945 ideas counter to efficiency and coordination began building and came to the fore after 1945. Another theory admits that during most of the period between 1945 and 1963 institutional rivalry was not a problem for state

governments. Students enrolled in unprecedented numbers, creating a situation wherein institutional leaders could ignore age-old rivalries in the struggle simply to find spaces for the students seeking admission. Their situation reasonably secure, institutions could more readily work together on a voluntary basis. Voluntary coordination thus proved successful, especially where the presidents of the major institutions in a state agreed on the need for voluntary coordination. Perhaps they had learned their lessons from the pre-war period.

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